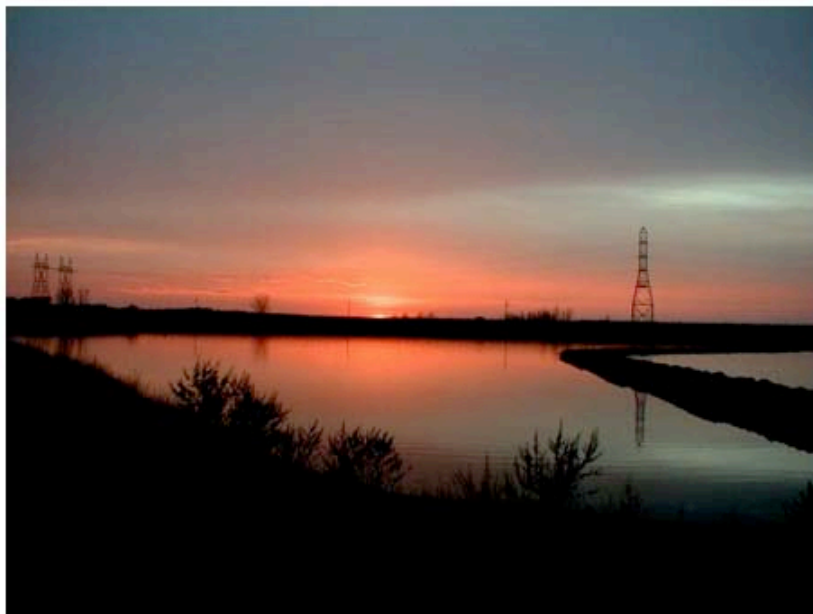


RECLAMATION

Managing Water in the West

Road and Railroad Crossing Inventory

Starkweather Coulee



U.S. Department of the Interior
Bureau of Reclamation
Great Plains Region
Dakotas Area Office

October 2004

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INTRODUCTION

The Bureau of Reclamation's Dakotas Area Office and the North Dakota State Water Commission are working together in an effort to assist the Devils Lake Joint Water Resources Board in the development and implementation of a sub-basin water management plan for the Starkweather Coulee watershed. The Board requested that an inventory survey be conducted of all road/railroad crossings on the Starkweather Coulee. In August and September of 2004 the main channel of Starkweather Coulee was surveyed beginning at Dry Lake and continuing upstream to approximately 1/2 mile north of the town of Clyde. The inventory survey data for the Starkweather Coulee is contained in this report. Funding for the inventory surveys has been provided through the Bureau of Reclamation's Technical Assistance to States (TATS) program.

Bureau of Reclamation surveyors collected data on the Starkweather Coulee, recording the location of each crossing, the size and type of bridge or culvert, the inlet and outlet invert elevations, top of grade elevation, and relative condition of the structure.

This report includes maps of the crossing locations, photographs of downstream, upstream and center of road or railroad, survey data of the bridge deck, culvert sizes and lengths, relative condition, invert elevations, and channel elevations; in North Dakota State Plane Coordinates, North Zone, NAD 27 and elevations in NGVD 29 at all crossings. Also, a table of all recorded bench marks and temporary bench marks used in the survey control network for this project is included. The state plane coordinates, latitudes, longitudes and elevations for each bench mark are listed.

In an effort to establish comparable elevations throughout the Devils Lake area the State Water Commission has established a new local datum (refer to SWC letter dated 7-28-99) for the Devils Lake area. The new datum, SWC99, is based on the NGVD 29 datum.

For the Starkweather Coulee survey the Bureau of Reclamation survey crew held bench mark elevations and coordinates from previous inventory surveys of Edmore Coulee (2000) and Calio Coulee (2002). The coordinates and elevations of bench marks GROAT, P258, B259, TBM 02-2 and P414 were held as fixed. The year 2004 survey of Starkweather Coulee uses the same control networks as previous inventory surveys and will conform to the SWC99 datum. All surveys were performed using G.P.S. fast static and RTK survey methods. Three temporary bench marks (TBM 04-1, TBM 04-2, TBM 04-3) were established by the Bureau of Reclamation for this project and are marked by 5/8" rebar with orange plastic caps stamped "USBR."

Reclamation is able to provide this assistance to the Board and State Water Commission through its Technical Assistance program. The Technical Assistance program allows Reclamation to provide assistance to state agencies in water management evaluations they are conducting, at no cost to the state agency. The mission of the Reclamation's Dakotas Area Office is to provide technical assistance and leadership in the responsible development and management of water and related resources to enhance the quality of life in North Dakota and South Dakota.



S1 Upstream side of four 96" CMPs in good condition, 5.2 feet, 5.3 feet, 5.0 & 4.8 feet of water, from east to west (09-21-04), Section 23 & 26, T156N, R65W,
 N 481931.13, E 2374062.39, elevation 1443.4 @ invert of 96" CMP
 N 481930.83, E 2374039.95, elevation 1443.3 @ invert of 96" CMP
 N 481931.06, E 2374017.58, elevation 1443.6 @ invert of 96" CMP
 N 481930.87, E 2373996.14, elevation 1443.8 @ invert of 96" CMP.



S1 Downstream side of four 96" CMPs in good condition, 5.3 feet, 5.3 feet, 4.9 & 4.9 feet of water, from east to west (09-21-04), Section 23 & 26, T156N, R65W,
 N 481894.65, E 2374063.16, elevation 1443.2 @ invert of 96" CMP
 N 481894.43, E 2374040.87, elevation 1443.3 @ invert of 96" CMP
 N 481893.37, E 2374018.07, elevation 1443.6 @ invert of 96" CMP
 N 481892.92, E 2373996.43, elevation 1443.6 @ invert of 96" CMP.



S1 Center of road crossing across four 96" CMPs, looking west (09-21-04), Section 23 & 26, T156N, R65W, N 481911.42, E 2374028.70, elevation 1452.5 @ center of road crossing, top of ground.



S2 Upstream side of concrete bridge, in good condition, 1.4 feet of water (09-21-04), Section 19 & 24, T156N, R64 & 65W, N 485447.68, E 2379442.35, coulee bottom elevation 1447.5 @ C/L of bridge.



S2 Downstream side of concrete bridge, in good condition, 1.6 feet of water (09-21-04), Section 19 & 24, T156N, R64 & 65W, N 485446.74, E 2379410.05, coulee bottom elevation 1447.4 @ C/L of bridge.



S2 Center of concrete bridge, looking south in good condition, 29.3 feet wide & 45.9 feet long (09-21-04) Section 19 & 24, T156N, R64 & 65W, N485447.42, E 2379426.23, elevation 1461.1 @ C/L of bridge, top of concrete



S3 Upstream side of four 60" CMPs in good condition, 0.3 feet, no water, no water, no water, from south to north (09-21-04), Section 17 & 18, T156N, R64W, N 488906.61, E 2384470.09, elevation 1451.2 @ invert of 60" CMP
N 488919.32, E 2384468.97, elevation 1452.8 @ invert of 60" CMP
N 488932.16, E 2384469.26, elevation 1452.5 @ invert of 60" CMP
N 488945.52, E 2384469.38, elevation 1452.6 @ invert of 60" CMP.



S3 Downstream side of four 60" CMPs in good condition, 0.4 feet, no water, no water, no water, from south to north (09-21-04), Section 17 & 18, T156N, R64W, N 488905.36, E 2384427.24, elevation 1451.1 @ invert of 60" CMP
N 488919.10, E 2384426.59, elevation 1452.3 @ invert of 60" CMP
N 488931.71, E 2384426.55, elevation 1452.3 @ invert of 60" CMP
N 488944.67, E 2384426.58, elevation 1452.3 @ invert of 60" CMP.



S3 Center of road crossing across four 60" CMPs, looking north (09-21-04), Section 17 & 18, T156N, R64W, N 488925.95, E 2384448.80, elevation 1459.5 @ center of trail crossing, top of ground.



S4 Upstream side of double cell 6' foot box culvert, in good condition, no water (09-21-04), Section 9 & 10, T156N, R64W, N 496013.34, E 2394640.13, coulee bottom elevation 1460.4 @ C/L of box.



S4 Downstream side of double cell 6' foot box culvert , in good condition, no water (09-21-04), Section 9 & 10, T156N, R64W, N 496011.23, E 2394596.25, coulee bottom elevation 1460.4 @ C/L of box.



S4 Center of road crossing of 43.0 feet wide, & 19.0 feet long box culvert, in good condition, looking north (09-21-04), Section 9 & 10, T156N, R64W, N 496012.90, E 2394618.14, elevation 1464.1 @ center of highway 20, top of asphalt.



S5 Upstream side of one 36" concrete pipe, in good condition, 0.4 feet of water (09-21-04), Section 9 & 10, T156N, R64W, N 495971.22, E 2394661.34, elevation 1457.6 @ invert of concrete pipe.



S5 Downstream side of one 36" concrete pipe, in good condition, 0.3 feet of Water (09-21-04), Section 9 & 10, T156N, R64W, N 495965.02 E 2394578.88, elevation 1457.7 @ invert of concrete pipe.



S5 Center of road crossing across one 36" CMP, looking north (09-21-04),
Section 9 & 10, T156N, R64W, N 495967.78, E 2394620.31, elevation 1469.3
@ center of Hwy 20, top of asphalt.



S6 Upstream side of concrete bridge, in good condition, no water (09-21-04),
Section 11 & 12, T156N, R64W, N 493198.62, E 2405519.20, coulee bottom
Elevation 1460.5 @ C/L of bridge.



S6 Downstream side of concrete bridge in good condition, 0.2 feet of water (09-21-04), Section 11 & 12, T156N, R64W, N 493199.07, E 2405488.72, coulee bottom elevation 1460.5 @ C/L of bridge.



S6 Center of concrete bridge, looking north in good condition, 28.0 feet wide & 54.0 feet long (09-21-04), Section 11 & 12, T156N, R64W, N 493198.85, E 2405503.89, elevation 1474.1 @ C/L of bridge, top of concrete.



S7 Upstream side of 5 CMPs in good condition, , 72", 60", 60", 60", & 72",
 CMPs no water, 0.2 feet, 0.3 feet, 0.2 feet, no water, from west to east
 (09-21-04), Section 13 & 24, T156N, R64W,
 N 487921.49, E 2409593.46, elevation 1461.3 @ invert of 72" CMP,
 N 487926.42, E 2409601.81, elevation 1461.0 @ invert of 60" CMP,
 N 487927.30, E 2409610.25, elevation 1461.0 @ invert of 60" CMP,
 N 487927.67, E 2409619.31, elevation 1461.1 @ invert of 60", CMP,
 N 487919.01, E 2409629.59, elevation 1461.8 @ invert of 72" CMP.



S7 Downstream side of 5 CMPs in good condition, 72", 60", 60", 60", & 72"
 CMPs, no water, no water, 1.0 feet, 0.9 feet, no water, from west to east
 (09-21-04), Section 13 & 24, T156N, R64W,
 N 487972.38, E 2409588.84, elevation 1461.8 @ invert of 72" CMP,
 N 487969.22, E 2409599.75, elevation 1461.2 @ invert of 60" CMP,
 N 487969.87, E 2409607.82, elevation 1460.7 @ invert of 60" CMP,
 N 487970.30, E 2409617.79, elevation 1460.6 @ invert of 60" CMP,
 N 487979.89, E 2409625.65, elevation 1462.1 @ invert of 72" CMP.



S7 Center of road crossing, between 5 CMPs, looking east, (09-21-04),
 Section 13 & 24, T156N, R64W, N 487948.81, E 2409611.93, elevation 1469.0
 @ center of road crossing, top of ground.



S8 Upstream side of 3 CMPs in fair condition, 60", 48", & 48" CMPs,
 0.1 feet, 0.9 feet, & 0.6 feet of water, from west to east (09-21-04),
 Section 24 & 25, T156N, R64W,
 N 482611.92, E 2408969.57, elevation 1463.2 @ invert of 60" CMP,
 N 482612.49, E 2408982.12, elevation 1462.8 @ invert of 48" CMP,
 N 482613.86, E 2408996.30, elevation 1463.2 @ invert of 48" CMP.



S8 Downstream side of 3 CMPs in fair condition, 60", 48", & 48" CMPs, 0.5 feet, 0.6 feet, & 0.7 feet of water, from west to east (09-21-04), Section 24 & 25, T156N, R64W, N 482653.14, E 2408965.77, elevation 1462.9 @ invert of 60" CMP, N 482653.63, E 2408978.52, elevation 1463.1 @ invert of 48" CMP, N 482654.44, E 2408993.34, elevation 1463.1 @ invert of 48" CMP.



S8 Center of road crossing, between 3 CMPs, looking east (09-21-04), Section 24 & 25, T156N, R64W, N 482633.77, E 2408980.61, Elevation 1469.3 @ center of road crossing, top of ground.



S9 Upstream side of three 60" CMPs, in fair condition, no water, from west to east (09-22-04), Section 7 & 18, T156N, R63W,
 N 488040.11, E 2412617.55, elevation 1464.0 @ invert of 60" CMP,
 N 488040.05, E 2412626.74, elevation 1464.1 @ invert of 60" CMP,
 N 488040.55, E 2412636.14, elevation 1463.9 @ invert of 60" CMP.



S9 Downstream side of three 60" CMPs, in fair condition, no water, from west to east (09-22-04), Section 7 & 18, T156N, R63W,
 N 487997.77, E 2412618.68, elevation 1464.0 @ invert of 60" CMP,
 N 487997.71, E 2412627.72, elevation 1463.8 @ invert of 60" CMP,
 N 487998.12, E 2412636.85, elevation 1463.8 @ invert of 60" CMP.



S9 Center of road crossing across three 60" CMPs, looking east, (09-22-04), Section 7 & 18, T156N, R63W, N 488018.56, E 2412627.74, elevation 1470.8 @ center of road crossing, top of ground.



S10 Upstream side of wood & concrete bridge, in fair condition, 0.9 feet of Water (90-22-04), Section 7 & 18, T156N, R63W, N 493361.07, E 2414285.82, coulee bottom elevation 1465.0 @ center of coulee.



S10 Downstream side of wood & concrete bridge, in fair condition 0.6 feet of water (09-22-04), Section 7 & 18, T156N, R63W, N 493331.57, E 2414290.75, coulee bottom elevation 1465.4 @ center of coulee.



S10 Center of wood & concrete bridge, looking west in fair condition, 30.2 feet wide & 36.0 feet wide (09-22-04), Section 7 & 18, T156N, R63W, N 493346.42, E 2414289.32, elevation 1477.7 @ C/L of bridge, top of concrete.



S11 Upstream side of wood & steel bridge, and one 60" CMP, in fair condition, south to north, (09-22-04), Section 7 & 8, T156N, R63W, N 497616.86, E 2415866.75, coulee bottom elevation 1465.4 @ C/L of bridge, N 497644.29, E 2415879.88, elevation 1469.9 @ invert of CMP, CMP no water.



S11 Downstream side of wood & steel bridge, and one 60" CMP, in fair condition, south to north, (09-22-04), Section 7 & 8, T156N, R63W, N 497615.84, E 2415840.66, coulee bottom elevation 1465.6 @ C/L of bridge, N 497640.24, E 2415830.53, elevation 1469.9 @ invert of CMP, CMP no water.



S11 Center of concrete & steel bridge, looking north, in fair condition, 26 feet wide & 20 feet long, (09-22-04), Section 7 & 8, T156N, R63W, N 497616.37, E 2415853.91, elevation 1477.0 @ C/L of bridge, top of gravel.



S12 Upstream side of wood & concrete bridge, with one 72" CMP, in fair condition, 2.0 feet, no water & no water (09-22-04) west to east, Section 5 & 8 T156N, R63W, N 498749.55, E 2417938.43, coulee bottom elevation 1468.7 @ C/L of bridge, N 498765.50, E 2417963.41, elevation 1470.1 @ invert of CMP.



S12 Downstream side of wood & concrete bridge, with one 72" CMP, in fair condition, no water & no water (09-22-04) west to east, Section 5 & 8 T156N, R63W, N 498725.07, E 2417940.26, coulee bottom elevation 1469.8 @ C/L of bridge, N 498704.95, E 2417966.93, elevation 1469.7 @ invert of CMP.



S12 Center of wood & concrete bridge, looking east in fair condition, 24.0 feet wide & 24.0 feet wide (09-22-04), Section 5 & 8, T156N, R63W, N 498737.30, E 2417937.87, elevation 1478.7 @ C/L of bridge, top of gravel.



S13 Upstream side of Texas crossing, in poor condition, no water (09-23-04),
Section 33 & 5, T156 & 157N, R63W, N 504444.57, E 2415921.74,
elevation 1473.1 top of rocks.



S14 Downstream side of Texas crossing, in poor condition, no water (09-23-04),
Section 33 & 5, T156 & 157N, R63W, N 504418.29, E 2415925.74,
elevation 1473.1 top of rocks.



S13 Center of Texas Crossing, looking east, (09-23-04), Section 33 & 5, T156 & 157N, R63W, N 504434.05, E 2415925.52, elevation 1473.2 @ center of Texas crossing, top of rocks.



S14 Upstream side of wood & concrete bridge, in poor condition, 2.4 feet of Water (09-23-04), Section 28 & 33, T157N, R63W, N 509761.02, E 2417308.66, coulee bottom elevation 1472.3 @ C/L of bridge.



S14 Downstream side of wood & concrete bridge, in poor condition, 2.2 feet of water (09-23-04), Section 28 & 33, T157N, R63W. N 509736.36, E 2417309.54, coulee bottom elevation 1472.6 @ C/L of bridge.



S14 Center of wood & concrete bridge, looking west in poor condition, 24.2 feet wide & 20.0 feet long (09-23-04), Section 28 & 33, T157N, R63W, N 509748.80, E 2417309.02, elevation 1481.8 @ C/L of bridge, top of gravel.



S15 Upstream side of two 60" & one 72" CMPs in good condition, no water, 0.8 feet & 1.9 feet of water, from east to west (09-23-04), Section 21 & 28, T157N, R63W

N 515052.09, E 2417147.29, elevation 1475.4 @ invert of 60" CMP,

N 515052.26, E 2417135.10, elevation 1474.5 @ invert of 60" CMP,

N 515054.35, E 2417115.25, elevation 1473.4 @ invert of 72" CMP.



S15 Downstream side of two 60" & one 72" CMPs in good condition, 0.6 feet, 0.9 feet, 1.4 feet of water, from east to west (09-23-04), Section 21 & 28, T157N, R63W

N 515009.67, E 2417146.57, elevation 1474.7 @ invert of 60" CMP,

N 515009.76, E 2417135.96, elevation 1474.5 @ invert of 60" CMP,

N 515004.38, E 2417120.02, elevation 1473.9 @ invert of 72" CMP.



S15 Center of road crossing, top of gravel, looking west, (09-23-04),
 Section 21 & 28, T157N, R63W, N 515030.18, E 2417136.66, elevation 1482.5
 @ center of road crossing, top of gravel.



S16 Upstream side in one 72" & two 48" CMPs, in fair condition, no water, no water,
 & no water, from south to north (09-23-04), Section 21 & 22, T157N, R63W,
 N 515699.49, E 2419031.30, elevation 1478.8 @ invert of 72" CMP,
 N 515709.56, E 2419022.63, elevation 1477.7 @ invert of 48" CMP,
 N 515723.49, E 2419021.37, elevation 1477.4 @ invert of 48" CMP.



S16 Downstream side in one 72" & two 48" CMPs, in fair condition, no water, no water, & no water, from south to north (09-23-04), Section 21 & 22, T157N, R63W, N 515692.52, E 2418980.85, elevation 1478.2 @ invert of 72" CMP, N 515708.62, E 2418989.63, elevation 1478.2 @ invert of 48" CMP, N 515721.91, E 2418987.81, elevation 1478.1 @ invert of 48" CMP.



S16 Center of road crossings across one 72" & two 48" CMPs, looking north, (09-23-04), Section 21 & 22, T157N, R63W, N 515708.47, E 2419006.95, elevation 1484.9 @ center of road crossing, top of ground.



S17 Upstream side of three 60" CMPs, in good condition, 0.3 feet, 1.0 feet, & 1.3 feet of water, from south to north (09-24-04), Section 21 & 22, T157N, R63W, N 518986.54, E 2418924.32, elevation 1479.8 @ invert of 60" CMP, N 519001.02, E 2418924.67, elevation 1479.0 @ invert of 60" CMP, N 519013.99, E 2418925.40, elevation 1478.7 @ invert of 60" CMP.



S17 Downstream side of three 60" CMPs, in good condition, 0.5 feet, 0.7 feet, & 1.3 feet of water, from south to north (09-24-04), Section 21 & 22, T157N, R63W. N 518989.27, E 2418975.18, elevation 1479.6 @ invert of 60" CMP, N 519003.83, E 2418976.33, elevation 1479.3 @ invert of 60" CMP, N 519016.22, E 2418973.90, elevation 1478.8 @ invert of 60" CMP.



S17 Center of road crossing across three 60" CMPs, looking north (09-24-04), Section 21 & 22, T157N, R63W, N 519001.55, E 2418948.48, elevation 1487.5 @ center of road crossing, top of gravel.



S18 Upstream side of four cell 7 foot box culvert, in good condition (09-24-04), Section 16 & 21, T157N, R63W, N 520346.56, E 2417422.63, box culvert elevation 1482.8 @ C/L of box culvert.



S18 Downstream side of four cell 7 foot box culvert, in good condition (09-24-04), Section 16 & 21, T157N, R63W, N 520292.59, E 2417423.46, box culvert elevation 1482.8, @ C/L of box culvert.



S18 Center of road crossing of 54.0 feet wide & 42.0 feet long box culvert, in good condition, looking west (09-24-04), Section 16 & 21, T157N, R63W, N 520319.80, E 2417422.81, elevation 1493.6 @ C/L of Highway 17, top of asphalt.



S19 Upstream side of four 72" CMPs, in good condition, 1.0 feet, 1.0 feet, 1.0, & 1.0 feet of water from east to west (09-24-04), Section 9 & 16, T157N, R63W, N 525633.66, E 2417724.00, elevation 1483.0 @ invert of 72" CMP, N 525632.54, E 2417715.83, elevation 1483.1 @ invert of 72" CMP, N 525631.22, E 2417707.82, elevation 1483.0 @ invert of 72" CMP, N 525629.71, E 2417699.73, elevation 1483.1 @ invert of 72" CMP.



S19 Downstream side of four 72" CMPs, in good condition, 1.0 feet, 1.0 feet, 1.0, & 0.9 feet of water from east to west (09-24-04), Section 9 & 16, T157N, R63W, N 525584.11, E 2417733.42, elevation 1482.9 @ invert of 72" CMP, N 525583.06, E 2417725.16, elevation 1482.9 @ invert of 72" CMP, N 525581.70, E 2417716.87, elevation 1483.2 @ invert of 72" CMP, N 525580.34, E 2417708.78, elevation 1483.2 @ invert of 72" CMP.



S19 Center of road crossing across four 72" CMPs, looking west (09-24-04),
Section 9 & 16, T157N, R63W, N 525611.01, E 2417716.03, elevation 1491.6
@ center of road crossing, top of gravel.



S20 Upstream side of one 48" & three 60" CMPs, in good condition,
no water, no water, 0.6 feet & no water, from south to north (09-24-04),
Section 9 & 10, T157N, R63W,
N 527185.93, E 2418803.25, elevation 1486.1 @ invert of 48" CMP,
N 527212.48, E 2418807.33, elevation 1487.6 @ invert of 60" CMP,
N 527226.06, E 2418810.37, elevation 1484.9 @ invert of 60" CMP,
N 527243.24, E 2418810.31, elevation 1486.8 @ invert of 60" CMP.



S20 Downstream side of one 48" & three 60" CMPs, in good condition, no water, no water, 0.4 feet & no water, from south to north (09-24-04), Section 9 & 10, T157N, R63W,
 N 527185.51, E 2418765.58, elevation 1486.3 @ invert of 48" CMP,
 N 527200.87, E 2418758.51, elevation 1486.7 @ invert of 60" CMP,
 N 527219.25, E 2418760.70, elevation 1485.0 @ invert of 60" CMP,
 N 527231.46, E 2418761.77, elevation 1486.2 @ invert of 60" CMP.



S20 Center of road crossing across one 48" & three 60" CMPs, looking north (09-24-04), Section 9 & 10, T157N, R63W, N 527214.64, E 2418784.29, elevation 1493.5 @ center of road crossing, top of gravel.



S21 Upstream side of four 60" CMPs, in good condition, no water, from east to west (09-24-04), Section 3 & 4, T157N, R63W,
 N 530964.04, E 2419835.61, elevation 1488.5 @ invert of 60" CMP,
 N 530963.26, E 2419827.20, elevation 1488.5 @ invert of 60" CMP,
 N 530963.70, E 2419817.40, elevation 1488.5 @ invert of 60" CMP,
 N 530963.79, E 2419808.89, elevation 1488.7 @ invert of 60" CMP.



S21 Downstream side of four 60" CMPs, in good condition, 0.6 feet, 0.7 feet, 0.6 feet & no water, from east to west (09-24-04), Section 3 & 4, T157N, R63W,
 N 530915.80, E 2419836.00, elevation 1488.5 @ invert of 60" CMP,
 N 530915.17, E 2419827.21, elevation 1488.4 @ invert of 60" CMP,
 N 530915.64, E 2419818.21, elevation 1488.5 @ invert of 60" CMP,
 N 530915.17, E 2419809.24, elevation 1488.7 @ invert of 60" CMP.



S21 Center of road crossing across four 60" CMPs, looking west (09-24-04), Section 3 & 4, T157N, R63W, N 530940.38, E 2419821.97, elevation 1498.2 @ center of road crossing, top of gravel.



S22 Upstream side of three 60" CMPs, in poor condition, collapsed 3.1 feet, 0.8 feet & no water, from south to north (09-24-04), Section 33 & 34, T158N, R63W, N 536668.21, E 2418570.97, elevation 1492.2 @ invert of 60" CMP, N 536676.39, E 2418575.21, elevation 1493.7 @ invert of 60" CMP, N 536688.84, E 2418576.40, elevation 1494.6 @ invert of 60" CMP.



S22 Downstream side of three 60" CMPs, in poor condition, water is backup from other fork & is undercut, no water, from south to north (09-24-04), Section 33 & 34, T158N, R63W, N 536667.18, E 2418622.07, elevation 1495.3 @ invert of 60" CMP, N 536676.26, E 2418625.84, elevation 1494.8 @ invert of 60" CMP, N 536687.63, E 2418625.51, elevation 1494.2 @ invert of 60" CMP.



S22 Center of road crossing across three 60" CMPs, looking north (09-24-04), Section 33 & 34, T158N, R63W, N 536676.41, E 2418601.95, elevation 1501.0 @ center of trail crossing, top of ground.



S23 Upstream side of concrete bridge, in new condition 2.2 feet of water (09-28-04), Section 28 & 33, T158N, R63W, N 541399.19, E 2414512.49, coulee bottom elevation 1496.4 @ C/L of bridge.



S23 Downstream side of concrete bridge, in new condition, 2.1 feet of water (09-28-04), Section 28 & 33, T158N, R63W, N 541366.94, E 2414510.02, coulee bottom elevation 1496.4 @ C/L of bridge.



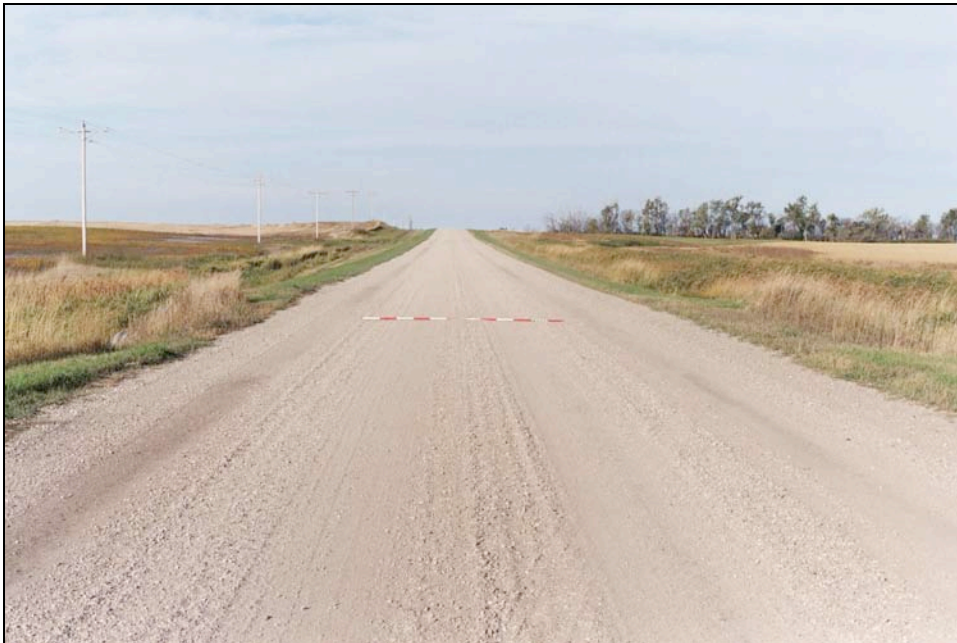
S23 Center of concrete bridge, looking east in new condition, 32.0 feet wide & 42.0 feet long (09-28-04), Section 28 & 33, T158N, R63W, N 541383.19, E 2414512.97, elevation 1507.3 @ C/L of bridge, top of concrete.



S24 Upstream side of two 72" CMPs, in good condition, 0.1 feet of water & no water, east to west (09-29-04), Section 20 & 29, T158N, R63W, N 546626.00, E 2411209.26, elevation 1502.9 @ invert of 72" CMP, N 546625.04, E 2411190.77, elevation 1503.0 @ invert of 72" CMP.



S24 Downstream side of two 72" CMPs, in good condition, no water & no water, east to west (09-29-04), Section 20 & 29, T158N, R63W, N 546573.35, E 2411213.10, elevation 1503.0 @ invert of 72" CMP, N 546572.47, E 2411194.30, elevation 1503.0 @ invert of 72" CMP.



S 24 Center of road crossing across two 72" CMPs, looking west (09-29-04), Section 20 & 29, T158N, R63W, N546595.98, E 2411202.08, elevation 1511.1 @ center of road crossing, top of gravel.



S25 Upstream side of two 72" CMPs, in good condition, no water & no water,
east to west (09-29-04), Section 5 & 8, T158N, R63W,
N 562430.05, E 2409628.60, elevation 1522.3@ invert of 72" CMP,
N 562427.39, E 2409620.56, elevation 1522.2@ invert of 72" CMP.



S25 Downstream side of two 72" CMPs, in good condition, no water & no water,
east to west (09-29-04), Section 5 & 8, T158N, R63W,
N 562385.07, E 2409640.85, elevation 1522.0 @ invert of 72" CMP,
N 562382.45, E 2409632.55, elevation 1522.1 @ invert of 72" CMP.



S25 Center of road crossing two 72" CMPs, looking west (09-29-04), Section 5 & 8, T158N, R63W, N 562406.84, E 2409630.40, elevation 1529.3 @ center of road crossing, top of gravel.



S26 Upstream side of one 120" CMP, in good condition, 0.9 feet of water (09-29-04), Section 32 & 5, T158 & 159N, R63W, N 567721.77, E 2410233.21, elevation 1529.8 @ invert of CMP.



S26 Downstream side of one 120" CMP, in good condition, 0.7 feet of water (09-29-04), Section 32 & 5, T158 & 159N, R63W, N 567642.51, E 2410234.60, elevation 1530.1 @ invert of CMP.



S26 Center of road crossing across on 120" CMP, looking west (09-29-04), Section 32 & 5, T158 & 159N, R63W, N 567680.30, E 2410233.86, elevation 1541.1 @ center of road crossing, top of gravel.



S27 Upstream side of wood & concrete bridge, in poor condition, 1.0 feet of water (09-29-04), Section 29 & 32, T159N, R63W, N 572923.99, E 2407974.02, elevation 1535.6 @ coulee bottom.



S27 Downstream side of wood & concrete bridge, in poor condition, 1.1 feet of water (09-29-04), Section 29 & 32, T159N, R63W, N 572903.94, E 2407976.76, elevation 1534.5 @ coulee bottom.



S27 Center of wood & concrete bridge, looking west, in poor condition, 20.3 feet wide & 19.4 feet wide (09-29-04), Section 29 & 32, T159N, R63W, N 572914.05, E 2407971.01, elevation 1538.3 @ C/L of bridge, top of wood.



S28 Upstream side of concrete bridge, in poor condition, 0.9 feet of water (09-29-04), Section 30 & 29, T159N, R63W, N 576614.76, E 2407080.82. coulee bottom elevation 1541.6 @ C/L of bridge.



S28 Downstream side of concrete bridge, in poor condition, 1.4 feet of water (09-29-04), Section 30 & 29, T159N, R63W, N 576614.43, E 2407098.86, coulee bottom elevation 1541.4 @ C/L of bridge.



S29 Center of concrete bridge, looking north, in poor condition, 18.0 feet wide & 15.0 feet long (09-29-04), Section 30 & 29, T159N, R63W, N 576614.96, E 2407089.51, elevation 1549.4 @ C/L of bridge, top of concrete.



S29 Upstream side of wood & concrete bridge, in poor condition, 1.5 feet of water (09-29-04), Section 30 & 29, T159N, R63W, N 577663.17, E 2407075.68, elevation 1542.6 @ coulee bottom.



S29 Downstream side of wood & concrete bridge, in poor condition, no water (09-29-04), Section 30 & 29, T159N, R63W, N 577660.87, E 2407055.22, elevation 1544.5 @ coulee bottom.



S29 Center of wood & concrete bridge, looking north, in poor condition, 20.2 wide & 18.8 feet wide (09-29-04), Section 30 & 29, T159N, R63W, N 577663.64, E 2407064.82, elevation 1552.5 @ C/L of bridge, top of wood.



S30 Upstream side of concrete bridge, in poor condition, 0.8 feet of water (09-29-04), Section 19 & 30, T159N R63W, N 578153.63, E 2405475.61, elevation 1543.2 @ coulee bottom.



S30 Downstream side of concrete bridge, in poor condition, 0.9 feet of water (09-29-04), Section 19 & 30, T159N, R63W, N 578134.62, E 2405475.99, elevation 1543.2 @ coulee bottom.



S30 Center of concrete bridge, looking west in poor condition, 18.0 feet wide & 18.0 feet long (09-29-04), Section 19 & 30, T159N, R63W, N 578144.37, E 2405475.29, elevation 1550.3 @ C/L of bridge, top of concrete.



S31 Upstream side of two 60" concrete pipes, in good condition, south to north, no water @ invert of concrete pipe & 0.1 feet of water @ invert of concrete pipe (09-29-04), Section 24 & 19, T159N, R63 & 64W, N 582613.67, E 2401692.08, elevation 1551.2 @ invert of 60" concrete pipe, N 582623.80, E 2401692.80, elevation 1551.2 @ invert of 60" concrete pipe.



S31 Downstream side of two 60" concrete pipes, in good condition, south to north, 0.4 feet of water @ invert of concrete pipe & 0.3 feet of water @ invert of concrete pipe (09-29-04), Section 24 & 19, T159N, R63 & 64W, N 582608.54, E 2401782.19, elevation 1551.0 @ invert of concrete pipe, N 582618.27, E 2401783.07, elevation 1551.0 @ invert of concrete pipe.



S31 Center of road crossing across two 60" concrete pipes, looking north (09-29-04), Section 24 & 19, T159N, R63 & 64W, N 582617.83, E 2401739.32, elevation 1559.4 @ center road crossing, top of asphalt.



S32 Upstream side of three 36" CMPs, in good condition, 0.1 feet, 0.6 feet, & 0.6 feet of water, from east to west (09-29-04), Section 13 & 24, T159N, R64W N 583363.62, E 2401188.82, elevation 1551.5 @ invert of 36" CMP, N 583362.66, E 2401171.74, elevation 1551.1 @ invert of 36" CMP, N 583361.61, E 2401156.32, elevation 1551.2 @ invert of 36" CMP.



S32 Downstream side of three 36" CMPs, in good condition, 0.2 feet, 0.7 feet & 0.1 feet of water, from east to west (09-29-04), Section 13 & 24, T159N R64W, N 583312.41, E 2401188.61, elevation 1551.2 @ invert of 36" CMP, N 583311.16, E 2401173.17, elevation 1550.8 @ invert of 36" CMP, N 583310.70, E 2401155.57, elevation 1551.5 @ invert of 36" CMP.



S32 Center of road crossing across three 36" CMPs, looking west (09-29-04), Section 13 & 24, T159N, R64W, N 583335.90, E 2401172.19, elevation 1558.0 @ center of road crossing, top of gravel.



S33 Upstream side of two 60" concrete pipes, in good condition, 0.3 feet of water & 0.3 feet of water, @ invert of concrete pipes, south to north (09-29-04), Section 13 & 18, T159N, R64 & 63W, N 587871.95, E 2401665.59, elevation 1558.2 @ invert of 60" concrete pipe, N 587882.44, E 2401664.42, elevation 1558.2 @ invert of 60" concrete pipe.



S33 Downstream side of two 60" concrete pipes, in good condition, no water (09-29-04), Section 13 & 18, T159N, R64 & 63W, N 587820.04, E 2401583.77, elevation 1558.4 @ invert of 60" CMP, N 587830.64, E 2401583.18, elevation 1558.5 @ invert of 60" CMP.



S33 Center of road crossing across two 60" concrete pipes, looking north (09-29-04), Section 13 & 18, T159N, R64 & 63W, N 587855.99, E 2401624.46, elevation 1569.2 @ center of road crossing, top of asphalt.



S34 Upstream side of two 60" CMPs, in good condition, no water (09-29-04), Section 6 & 7, T159N, R63W, N 593937.73, E 2402427.24, elevation 1564.9 @ invert of 60" CMP, N 593937.20, E 2402419.44, elevation 1564.9 @ invert of 60" CMP.



S34 Downstream side of two 60" CMPs, in good condition, no water (09-29-04), Section 6 & 7, T159N, R63W, N 593887.62, E 2402434.46, elevation 1564.6 @ invert of 60" CMP, N 593886.78, E 2402426.91, elevation 1564.8 @ invert of 60" CMP.



S34 Center of road crossing across two 60" CMPs, looking west (09-29-04), Section 6 & 7, T159N, R63W, N 593912.07, E 2402428.20, elevation 1573.0 @ center of road crossing, top of gravel.



S35 Upstream side on one 60" concrete pipe, in good condition, no water (09-29-04), Section 31 & 6, T159 & 160N, R63W, N599196.61, E 2401506.63, elevation 1572.2 @ invert of concrete pipe.



S35 Downstream side of one 60" concrete pipe, in good condition, no water (09-29-04), Section 31 & 6, T159 & 160N, R63W, N 59907.52, E 2401505.52, elevation 1572.0 @ invert of concrete pipe.



S35 Center of road crossing across one 60" CMP, looking east (09-29-04), Section 31 & 6, T159 & 160N, R63W, N 599147.63, E 2401506.26, elevation 1582.7 @ center of Hwy 66, top of asphalt.



S36 Upstream side of one 48" concrete pipe, in good condition, no water (09-29-04), Section 31, T160N, R63W, N 599287.49, E 2401497.59, elevation 1572.7 @ invert of concrete pipe.



S36 Downstream side of one 48" concrete pipe, in good condition, no water (09-29-04), Section 31, T160N, R63W, N 599244.67, E 2401496.90, elevation 1572.4 @ invert of concrete pipe.



S36 Center of railroad crossing across one 48" CMP, looking east (09-29-04), Section 31, T160N, R63W, N 599265.99, E 2401496.83, elevation 1582.1 @ center of railroad crossing, top of gravel.



S37 Upstream side of one 48" concrete pipe & two 30" CMPs, in good condition no water (09-29-04), Section 36 & 31, T160N, R63 & 64W, N 599635.34, E 2401347.84, elevation 1572.2 @ invert of 48" concrete pipe, N 599638.39, E 2401347.72, elevation 1572.2 @ invert of 30" CMP, N 599650.40, E 2401356.96, elevation 1574.0 @ invert of 30" CMP.



S37 Downstream side of one 48" concrete pipe & two 30" CMPs, in good condition, no water (09-29-04), Section 36 & 31, T160N, R63 & 64W, N 599604.53, E 2401409.10, elevation 1572.2 @ invert of 48" concrete pipe, N 599608.14, E 2401409.23, elevation 1572.4 @ invert of 30" CMP, N 599651.37, E 2401398.94, elevation 1573.8 @ invert of 30" CMP.



S37 Center of road crossing across one 48" concrete pipe & two 30" CMPs, looking north (09-29-04), Section 36 & 31, T160N, R63 & 64W, N 599637.21, E 2401379.11, elevation 1580.8 @ center of Hwy 20, top of asphalt.



S38 Upstream side of three 36" CMPs, in good condition, no water, from east to west (09-30-04), Section 25 & 36, T160N, R64W, N 604459.39, E 2400338.39, elevation 1579.2 @ invert of 36" CMP, N 604459.92, E 2400329.35, elevation 1579.0 @ invert of 36" CMP, N 604460.00, E 2400322.68, elevation 1578.4 @ invert of 36" CMP.



S38 Downstream side of three 36" CMPs, in good condition, no water, from east to west (09-30-04), Section 25 & 36, T160N, R64W, N 604412.85, E 2400348.27, elevation 1578.8 @ invert of 36" CMP, N 604413.85, E 2400341.13, elevation 1579.0 @ invert of 36" CMP, N 604413.60, E 2400334.26, elevation 1578.9 @ invert of 36" CMP.



S38 Center of road crossing across three 36" CMPs, looking west (09-30-04), Section 25 & 36, T160N, R64W, N 604436.08, E 2400335.37, elevation 1584.1 @ center of road crossing, top of ground.



S39 Upstream side of one 36", one 48" & one 36" CMPs, in good condition, no water, from east to west (09-30-04), Section 24 & 25, T160N, R64W, N 609722.59, E 2399320.78, elevation 1584.0 @ invert of 36" CMP, N 609723.48, E 2399306.98, elevation 1585.2 @ invert of 48" CMP, N 609723.92, E 2399299.78, elevation 1585.0 @ invert of 36" CMP.



S39 Downstream side of one 36", one 48" & one 36" CMPs, in good condition, no water, from east to west (09-30-04), Section 24 & 25, T160N, R64W, N 609681.76, E 2399324.11, elevation 1585.4 @ invert of 36" CMP, N 609678.74, E 2399307.73, elevation 1584.8 @ invert of 48" CMP, N 609677.84, E 2399300.66, elevation 1584.9 @ invert of 36" CMP.



S39 Center of road crossing across on 36", one 48" & one 36" CMPs, looking west (09-30-04), Section 24 & 25, T160N, R64W, N 609699.90, E 2399306.79, elevation 1591.2 @ center of road crossing, top of gravel.



S40 Upstream side of three 36" CMPs, in good condition, no water, from east to west (09-30-04), Section 13 & 24, T160N, R64W, N 614996.76, E 2398864.53, elevation 1590.6 @ invert of 36" CMP, N 614998.40, E 2398844.88, elevation 1591.5 @ invert of 36" CMP, N 614994.88, E 2398827.78, elevation 1591.8 @ invert of 36" CMP.



S40 Downstream side of three 36" CMPs, in good condition, no water, 0.4 feet & no water, from east to west (09-30-04), Section 13 & 14, T160N, R64W, N 614952.18, E 2398864.10, elevation 1590.3 @ invert of 36" CMP, N 614949.04, E 2398846.73, elevation 1589.9 @ invert of 36" CMP, N 614953.15, E 2398827.72, elevation 1591.5 @ invert of 36" CMP.



S40 Center of road crossing across three 36" CMPs, looking west (09-30-04), Section 13 & 24, T160N, R64W, N 614975.25, E 2398846.68, elevation 1597.9 @ center of road crossing, top of gravel.



S41 Upstream side of three 36" CMPs, in good condition, no water, from east to west (09-30-04), Section 12 & 13, T160N, R64W,
 N 620268.98, E 2397879.55, elevation 1595.6 @ invert of 36" CMP,
 N 620268.85, E 2397865.19, elevation 1595.3 @ invert of 36" CMP,
 N 620267.69, E 2397850.69, elevation 1594.4 @ invert of 36" CMP.



S41 Downstream side of three 36" CMPs, in good condition, no water, from east to west (09-30-04), Section 12 & 13, T160N, R64W,
 N 620227.63, E 2397881.66, elevation 1594.9 @ invert of 36" CMP,
 N 620227.22, E 2397865.25, elevation 1594.9 @ invert of 36" CMP,
 N 620229.48, E 2397850.76, elevation 1595.6 @ invert of 36" CMP.



S41 Center of road crossing across three 36" CMPs, looking west (09-30-04), Section 12 & 13, T160N, R64W, N 620248.26, E 2397865.62, elevation 1601.5 @ center of road crossing, top of gravel.



S42 Upstream side of one 24" concrete pipe, in good condition, no water (09-30-04), Section 12, T160N, R64W, N 623713.79, E 2397593.78, elevation 1598.2 @ invert of concrete pipe.



S42 Downstream side of one 24" concrete pipe, in good condition, no water (09-30-04), Section 12, T160N, R64W, N 623699.61, E 2397558.69, elevation 1598.8, @ invert of concrete pipe.



S42 Center of railroad crossing across one 24" CMP, looking north-west (09-30-04), Section 12, T160N, R64W, N 623707.28, E 2397576.54, elevation 1605.2 @ center of railroad crossing, top of gravel.



S43 Upstream side of one 36" & one 48" CMPs, in good condition, no water, east to west (09-30-04), Section 1 & 12, T160N, R64W, N 625560.78, E 2398105.55, elevation 1599.3 @ invert of 36" CMP, N 625559.98, E 2398091.36, elevation 1599.0 @ invert of 48" CMP.



S43 Downstream side of one 36" & one 48" CMPs, in good condition, no water, east to west (09-30-04), Section 1 & 12, T160N, R64W, N 625514.37, E 2398105.39, elevation 1598.7 @ invert of 36" CMP, N 625512.53, E 2398093.17, elevation 1598.9 @ invert of 48" CMP.



S43 Center of road crossing across one 36" & one 48" CMPs, looking west (09-30-04), Section 1 & 12, T160N, R64W, N 625532.99, E 2398097.24, elevation 1603.8 @ center of road crossing, top of gravel.



S44 Upstream side of two 48" CMPs, in good condition, no water, west to east (09-30-04), Section, 31 & 1, T160 & 161N, R64W, N 630938.89, E 2395597.95, elevation 1602.6 @ invert of 48" CMP, N 630940.99, E 2395616.37, elevation 1604.1 @ invert of 48" CMP.



S44 Downstream side of two 48" CMPs, in good condition, no water, west to east (09-30-04), Section 31 & 1, T160 & 161N, R64W, N 630903.87, E 2395600.26, elevation 1603.6 @ invert of 48" CMP, N 630903.24, E 2395616.79, elevation 1603.5 @ invert of 48" CMP.



S44 Center of road crossing across two 48" CMPs, looking east (09-30-04), Section 31 & 1, T160 & 161N, R64W, N 630921.08, E 2395608.14, elevation 1608.9 @ center of road crossing, top of gravel.



S45 Upstream side of one 24" CMP, in poor condition, no water (09-30-04), Section 30 & 31, T161N, R64W, N 636231.92, E 2396328.16, elevation 1606.6 @ invert of CMP.



S45 Downstream side of one 24" CMP, in poor condition, 0.7 feet of water (09-30-04), Section 30 & 31, T161N, R64W, N 636210.78, E 2396327.23, elevation 1605.2 @ invert of CMP.



S45 Center of road crossing across one 24" CMP, looking east (09-30-04), Section 30 & 1, T161N, R64W, N636221.77, E 2396327.16, elevation 1609.0 @ center of trail crossing, top of ground.



S46 Upstream side of two 48" CMP & one 30" concrete pipe, in good condition, no water, from west to east (09-30-04), Section 24 & 25, T161N, R64W, N 641454.77, E 2393066.34, elevation 1607.6 @ invert of 48" CMP, N 641457.12, E 2393080.29, elevation 1607.3 @ invert of 48" CMP, N 641452.16, E 2393091.80, elevation 1607.4 @ invert of 30" CMP.



S46 Downstream side of two 48" CMP & one 30" concrete pipe, in good condition, no water, from west to east (09-30-04), Section 24 & 25, T161N, R64W,
 N 641417.48, E 2393067.52, elevation 1607.7 @ invert of 48" CMP,
 N 641414.85, E 2393079.59, elevation 1607.5 @ invert of 48" CMP,
 N 641414.54, E 2393092.68, elevation 1607.7 @ invert of 30" CMP.



S46 Center of road crossing across two CMP & one concrete pipe, looking east (09-30-04), Section 24 & 25, T161N, R64W, N 641434.23, E 2393086.40, elevation 1611.8 @ center of road crossing, top of ground.



S47 Upstream side one 48" CMP & one 24" concrete pipe, in good condition, no water, west to east (09-30-04), Section 13 & 24, T161N, R64W, N 646698.92, E 2390960.29, elevation 1608.6 @ invert of 48" CMP, N 646702.54, E 2390997.47, elevation 1609.7 @ invert of 24" concrete pipe.



S47 Downstream side one 48" CMP & one 24" concrete pipe, in good condition, no water, east to west (09-30-04), Section 13 & 24, T161N, R64W, N 646646.31, E 2390961.54, elevation 1608.3 @ invert of 48" CMP, N 646646.65, E 2390998.83, elevation 1609.8 @ invert of 24" concrete pipe.



S47 Center of road crossing across one 48" CMP & one 24" concrete pipe, looking east (09-30-04), Section 13 & 24, T161N, R64W, N 646674.22, E 2390962.96, elevation 1616.1 @ center of Hwy 5, top of asphalt.



S48 Upstream side on one 24" & one 36" CMPs, in good condition, no water, west to east (09-30-04), Section 12 & 13, T161N, R64W, N 651953.31, E 2389331.02, elevation 1611.1 @ invert of 24" CMP, N 651955.07, E 2389344.35, elevation 1609.7 @ invert of 36" CMP.



S48 Downstream side of one 24" & one 36" CMPs, in good condition, no water, west to east (09-30-04), Section 12 & 13, T161N, R64W, N 651906.66, E 2389332.46, elevation 1610.9 @ invert of 24" CMP, N 651906.53, E 2389347.98, elevation 1609.6 @ invert of 36" CMP.



S48 Center of road crossing across one 24" & one 36" CMPs, looking east (09-30-04), Section 12 & 13, T161N, R64W, N 651929.76, E 2389339.04, elevation 1616.7 @ center of road crossing, top of gravel.



S49 Upstream side of one 24" concrete pipe, in good condition, no water (09-30-04), Section 11 & 12, T161N, R64W, N 653685.15, E 2387931.31, elevation 1612.9 @ invert of concrete pipe.



S49 Downstream side of one 24" concrete pipe, in good condition, no water (09-30-04), Section 11 & 12, T161N, R64W, N 653685.92, E 2387985.65, elevation 1612.8 @ invert of concrete pipe.



S49 Center of road crossing across one 24" CMP, looking north (09-30-04),
Section 11 & 12, T161N, R64W, N 653685.37, E 2387959.20, elevation 1619.1
@ center of Hwy 5, top of asphalt.

Bench Marks Used
Datum NAD 83

	Designation	Latitude	Longitude	Ellipsoid Height	Description
1	BM GROAT	48°20'23.25880"N	99°00'23.11876"W	1391.615	NGS Cap
2	TBM 02-2	48°42'11.72233"N	98°56'57.19467"W	1523.797	Rebar/Cap
3	BM P414	48°36'05.62286"N	98°29'33.35077"W	1485.259	NGS Cap
4	BM B259	48°26'33.22403"N	98°30'21.69475"W	1440.471	NGS Cap
5	BM P258	48°18'09.73280"N	98°22'09.98135"W	1437.236	NGS Cap
6	TBM 04-1	48°24'17.21125"N	98°47'48.61830"W	1411.797	Rebar/Cap
7	TBM 04-2	48°33'22.23567"N	98°49'07.12995"W	1480.335	Rebar/Cap
8	TBM 04-3	48°21'15.38849"N	98°49'56.90093"W	1405.349	Rebar/Cap

* Bold numbering is current survey control held, Points 6, 7 & 8 were surveyed in WGS 84
(done by G.P.S. Fast Static Survey)

Bench Marks Used
Local Coordinates
Datum NAD 27 & NGVD 29

	Designation	Northing	Easting	Elevation	Description
1	BM GROAT	492239.691	2363238.985	1468.63	NGS Cap
2	TBM 02-2	625084.172	2374478.040	1600.92	Rebar/Cap
3	BM P414	590543.086	2485687.249	1565.09	NGS Cap
4	BM B259	532472.305	2483940.887	1520.14	NGS Cap
5	BM P258	482359.065	2518494.217	1517.19	NGS Cap
6	TBM 04-1	516998.252	2413677.630	1490.01	Rebar/Cap
7	TBM 04-2	572099.698	2407175.415	1558.35	Rebar/Cap
8	TBM 04-3	498387.367	2405423.562	1483.40	Rebar/Cap

* Bold numbering is current survey control held, due to inaccuracy of NAD 27 Datum, the coordinates for Bench Marks will vary slightly, dependent upon which NAD control point is used. All points done by G.P.S. Fast Static Survey, then calculated to North Dakota Coordinate system, north zone, 1927 North American datum, elevation base on NGVD 29 datum.